



4910-06-P

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Railroad Administration**

#### **Approval of BNSF Railway Company Test Program to Evaluate Automated Track Inspection Technologies**

**Docket No. FRA-2018-0091**

**AGENCY:** Federal Railroad Administration (FRA), Department of Transportation (DOT).

**ACTION:** Notice of approval.

**SUMMARY:** FRA is issuing this notice to explain its rationale for approving a BNSF Railway Company (BNSF) Test Program designed to evaluate the effectiveness of various types of automated track inspection technologies and for granting a limited, temporary suspension of one Federal railroad safety requirement necessary to facilitate the conduct of the Test Program.

**FOR FURTHER INFORMATION CONTACT:** Yu-Jiang Zhang, Staff Director, Track Division, Office of Railroad Safety, FRA, 1200 New Jersey Avenue, SE, Washington, DC 20590, telephone (202) 493-6460 or email [yujiang.zhang@dot.gov](mailto:yujiang.zhang@dot.gov); Aaron Moore, Attorney, Office of Chief Counsel, FRA, 1200 New Jersey Avenue, SE, Washington, DC 20590, telephone (202) 493-7009 or email [aaron.moore@dot.gov](mailto:aaron.moore@dot.gov).

**SUPPLEMENTARY INFORMATION:** On July 31, 2018, BNSF petitioned FRA under Title 49 Code of Federal Regulations (CFR) Section 211.51 to suspend certain requirements of its track safety regulations to conduct a pilot program testing various types of automated track inspection methodologies on identified portions of BNSF's

Powder River Division main line and siding tracks. BNSF also submitted a Test Program providing a description of the proposed pilot program and the geographic scope of the testing territory. After review and analysis of the Petition and Test Program, on September 26, 2018, subject to certain conditions designed to ensure safety, FRA approved BNSF's Test Program and suspended the requirements of 49 CFR 213.233(c) as necessary to carry out the Test Program.<sup>1</sup> As required by 49 CFR 211.51(c), FRA is providing this explanatory statement describing the Test Program.

The Test Program specifies that the pilot program will be conducted on approximately 1,348 miles of main and siding tracks from Lincoln, Nebraska and Donkey Creek, Wyoming and back to Lincoln, Nebraska via BNSF's coal loop excluding the Orin Subdivision. Specifically, the Test Territory includes the following track segments spanning seven subdivisions of BNSF's Powder River Subdivision:

1. Ravenna (Milepost (MP) 11.082 to MP 128.200);
2. Sand Hills (MP 128.2 to MP 364.1);
3. Butte (MP 364.1 to MP 476.1);
4. Black Hills (MP 476.1 to MP 586.286);
5. Canyon (MP 90.4 to MP 133.2);
6. Valley (MP 0.00 to 90.4); and
7. Angora (MP 33.826 to MP 0.3).

The Test Program explains that tonnage over the Test Territory varies by subdivision from 105 million gross tons (MGT) to 198 MGT and that the primary traffic

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<sup>1</sup> On October 24, 2018, in response to a request from BNSF, FRA modified the conditions of its September 26, 2018 approval.

over the Test Territory is coal traffic. Further, BNSF indicates that 55 percent of the ties in the Test Territory are concrete and 45 percent are wood, with 520 control points, 292 bridges and 598 turnouts included within the territory.

The Test Program is designed to test the use of manned and unmanned track geometry cars for track inspection as a viable alternative to manual visual inspections and to implement and test an optical visual platform to supplement manual visual inspections. The Test Program will be carried out in four separate phases over the course of one year as detailed in Table 1 below:

Phase	Days	Inspection	Metric
1	1-60	<ul style="list-style-type: none"> <li>• Maintain current manual visual inspection frequency</li> <li>• Target of approximately weekly geometry car frequency</li> <li>• Joint BNSF/FRA “baseline” manual field inspection</li> </ul>	Below 2014 baseline for:  1. Unprotected Red tags/100 miles = 6.95
2	61-120	<ul style="list-style-type: none"> <li>• Weekly mandated manual visual main line inspections; monthly sidings</li> <li>• Target of approximately weekly mainline geometry car frequency; monthly sidings</li> <li>• ATIP Inspection near end of phase 2</li> </ul>	Reduction from baseline:  1. Unprotected Red tags/100 miles = 5.0 or below measured quarterly (28% reduction)
3	121-300	<ul style="list-style-type: none"> <li>• Data-driven focused manual visual inspections</li> <li>• Twice monthly mandated manual visual mainline inspections; monthly sidings</li> <li>• Data driven geometry car frequency, with a minimum of two such tests per month</li> <li>• Automated Optical inspection platform added at same frequency of track geometry testing</li> <li>• ATIP Test end of phase 3</li> </ul>	Reduction from baseline:  1. Unprotected Red tags/100 miles = 4.8 or below measured quarterly (31% reduction)
4	301-	<ul style="list-style-type: none"> <li>• Data-driven focused manual visual inspections</li> </ul>	Reduction from baseline:

	365	<ul style="list-style-type: none"> <li>• Twice monthly manual visual mainline inspections; monthly sidings</li> <li>• Data driven geometry car testing frequency, with a minimum of two such tests per month</li> <li>• Data driven optical testing frequency, with a minimum of two such tests per month</li> <li>• Additional technology tested</li> <li>• Joint BNSF/FRA Manual Field Inspection</li> </ul>	1. Unprotected Red tags/100 miles = 4.6 or below measured quarterly (34% reduction)
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Table 1: Phases of Test Program.

FRA approved the Test Program and granted BNSF’s petition for a temporary suspension of 49 CFR 213.233(c) subject to certain conditions designed to ensure the safety of the Test Program. Among those conditions, BNSF must demonstrate to FRA how it will implement the “data driven focused manual visual inspections” in Phases 3 and 4 of the Test Program and the railroad must meet the metrics specified in the Test Program to monitor and measure the effectiveness of the technologies being tested. If those metrics cannot be met in any phase of the program, BNSF must revise the Test Program. A copy of FRA’s letters approving BNSF’s Test Program and granting the requested limited, temporary suspension of 49 CFR 213.233(c) is available in the public docket at [www.regulations.gov](http://www.regulations.gov) (docket no. FRA-2018-0091).

FRA finds that the temporary, limited suspension of 49 CFR 213.233(c) is necessary to the conduct of the approved Test Program which is specifically designed to evaluate the effectiveness of various types of automated track inspection technologies. FRA also finds that the scope and application of the granted suspension of 49 CFR 213.233(c) as applied to the Test Program is limited to that necessary to facilitate the conduct of the Test Program.

**Robert C. Lauby,**  
Associate Administrator for Railroad Safety  
Chief Safety Officer.

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